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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/517,013	01/11/2005	Yoshitsugu Nishi	SHM-15810	2762
40854 7590 07/15/2009 RANKIN, HILL, & CLARK LLP 38210 Glenn Avenue WILLOUGHBY, OH 44094-7808				
EXAMINER				
CHU, HELEN OK				
ART UNIT		PAPER NUMBER		
1795				
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07/15/2009		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/517,013

**Applicant(s)**

NISHI ET AL.

**Examiner**

HELEN O.K. CHU

**Art Unit**

1795

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 March 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 and 9-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 9-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/CDC)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_
- Paper No(s)/Mail Date \_\_\_\_\_

**DETAILED ACTION**

1. Applicants' Response/Remarks have been received on March 5, 2009. Claims 9-12 are new.
2. The text of those sections of Title 35, U.S.C. code not included in this action can be found in the prior Office Action.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 12 is rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for electron beam irradiation is performed with respect to the contact face, does not reasonably provide enablement for "electron beam irradiation is performed with respect to **only** the contact face." The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make or use the invention commensurate in scope with these claims. Appropriate corrections or further clarification is required.

***Claim Rejections - 35 USC § 102***

4. The rejections under 35 U.S.C 102(b), on claims 1 is maintained. The rejection is repeated below for convenience.

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Itou et al. (JP 08-259767).

The Itou et al. reference discloses a method of manufacturing a bipolar-plastics board (Applicants separator) with slits curved on the plates on the bipolar plate to allow separation and rejoining of the solution from the manifold to positive or negative electrode (Applicants groove, P6). The bipolar-plastics board ethylene-vinyl acetate copolymers, ethylene ethyl acrylate copolymers and Ketchen black carbon (P 30) are mixed. An electron-beam-irradiating bridge construction is carried out after forming an electroconductive-plastics board (P22).

7. Claims 9-11 are rejected under 35 U.S.C. 102(b) as being unpatentable over Ohara et al. (U.S. Publication 2002/0197523) as evidence by Haas (US Patent 6,532,275)

The Ohara et al. reference discloses a method of a making a fuel cell separator with gas flow passage grooves by mixing a thermoplastic resin consisting of polyphenylene sulfide (P19) and a graphite conductive material (P22 and claim 10). The separator is irradiate with an electron beam (P57-P59, P117). The Ohara et al.

reference does not disclose black lead, however, as evidence by the Haas reference graphite is known in the art to be black lead (3, 38-44).

It is noted that claim 1, 9, 10 has "intended use" language such as "for manufacturing a fuel cell separator" and it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ2d 1647 (1987).

### ***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohara et al. (US Publication 2002/0197523 A1) in view of Kearn (US Publication 2003/0022052).

The Ohara et al. reference discloses the claimed invention above and further incorporated herein. The Ohara et al. does not disclose irradiating an electron beam on only the contact surface of the separator starting material. However, the Kearn reference discloses that it is well known in the art in order to form channels in bipolar plate by irradiation of electron beams on the surface (P76).

### ***Response to Arguments***

10. Applicant's arguments filed on March 5, 2009 have been fully considered but they are not persuasive. Applicants principal arguments are:

a. Applicants argue, *"It is preliminarily noted that while batteries and fuel cells are similar in many respects, there are differences. Both catalyze a reaction between two chemicals to produce electricity. a fuel cell does so by contacting two reactive fuel gases together (hydrogen and oxygen). The reactive fuel gases are constantly being supplied as a gas to the fuel cell and contacted together in the separator. In contrast thereto, a battery contains all of the chemicals it needs to produce electricity (the chemicals are not supplied from the outside). The chemical reaction in a battery occurs through the transport of a liquid electrolysis solution through the separator. It is considered noteworthy that batteries operate via the transport of a liquid, as opposed to a gas (as in a fuel cell)."* However, the instantly claimed invention does not differentiate the invention from a fuel cell and the invention as taught by Itou because both inventions provide an a bipolar plate comprising the same component with grooves of which reactants are fed into the manifold. The bipolar plates are made by the same method. The Applicants are arguing intended use of the instantly claimed invention in which the invention as disclosed by Itou is capable of. Again, It is noted that claim 1, 9, 10 has "intended use" language such as "for manufacturing a fuel cell separator" and it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a

prior art apparatus satisfying the claimed structural limitations. Ex parte Masham, 2 USPQ2d 1647 (1987).

b. Applicant argues, *"However, Itou fails to teach forming a separator starting material having gas flow passage grooves in a contact face..... on the basis of nationality. In re Moreton, 288 F.2d 708 (CCPA 1961). This rule is considered to mean that the benefit of the doubt cannot be assigned to a poorly translated or rough foreign reference. Rather, as with a U.S. patent or application, the reference must fully disclose the invention in order to anticipate the claim. Thus, the Examiner cannot give Itou the benefit of the doubt in regards to an undisclosed feature based solely on the present copy of Itou being a rough translation.*

*Turning to the disclosure of Itou, the Examiner looks to the recitation of "manifolds" in paragraph [0006] as teaching the gas flow passage grooves of claim 1. However, closer reference to paragraph [0006] shows that Itou is disclosing "four manifolds formed in the same position of each plate". With reference to Fig. 2, it is clear that the only items that could be interpreted to be "four manifolds formed in the same position of each plate" are the two holes formed at the top of each plate and the two holes formed at the bottom of each plate. Therefore, the only elements of Fig. 2 that could be interpreted to be the manifolds are said holes.*

*It is asserted that the recitation of (what appears to be) a set of rounded holes does not teach gas flow passage grooves formed in a face of the plate.*

*Rather, the holes are provided to transport liquid through the plates. In this regard, it is noted that the manifolds are not described or intended for gas transfer, and are therefore not gas passages"* However, Paragraph 6 states that slits are curved on the bipolar plates allow separation and rejoining of the solution from the manifold. The slits in which the Itou reference disclose is illustrates on Exhibit A in which the Examiner provided with markings of the Itou reference for purposes of clarification.

c. The Applicants argue, *"In the above-referenced conversation with the Examiner, the Examiner's stated position was that, given her familiarity with the art, she knows that the gas flow passage grooves are present. While the Examiner's expertise is appreciated, a proper anticipation rejection requires the teaching be present in the cited art itself. A reliance on the personal knowledge of the Examiner would require the Examiner to follow the procedures explained in MPEP 2144.03 and take Official Notice of the fact. Applicant believes that taking official notice of this particular feature would be improper under the rules"*

However, during the telephonic interview, as the Examiner was trying to explain the Office's position, the Examiner was interrupted by the Applicants representative and was not able to convey the Office's position. The Examiner has provided Exhibit A with Examiners markings of the Itou reference for purposes of clarification.

d. Newly presented claims 9-12 are not allowable; please refer to the rejection above.

***Conclusion***

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Helen O.K. Chu whose telephone number is (571) 272-5162. The examiner can normally be reached on Monday-Friday 8am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

HOC

/PATRICK RYAN/  
Supervisory Patent Examiner, Art Unit 1795